05-14

REGION VII FIT
PRELIMINARY ASSESSMENT
REEVALUATION WORKSHEET
(Based on File Information)

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Site Name: Unthum Trucking City: Buffalo, Iowa

WST #07_____ Site #___ CERCLIS #IAD980852297

Date of PA Completion 09/02/83, by IDWADM

Major Contaminant(s) Pb, Cd, Cu, Cr V, pH < 2

Scoring Scenarios	Current Score	Highest Score
Ground Water Route (Sgw) =	12.7	24.49
Surface Water Route (Sw) =	2.12	29.09
Air Route (Sa)	.0	76.6
Total Score (Sm)	7.4	49.46

Potential Releases (Probability)

(H)	M	L	Nill	- Ground Water
H	(M)	L	Nill	- Surface Water
H	(M)	L	Nill	- Air
H	(M)	L	Nill	- On-Site/Direct Contact

Site: Linwood Mining
ID #: IAD980852297
Break: 1.5
Other:
9-2-83

HRS-2 Comments

Ground Water Route:

Potential for ground water release is high since wastes can migrate through the highly permeable limestone. The score could increase slightly with the additional mile radius, and also increase in score due to the limestone described as karst, which is evaluated separately under HRS-2.

Surface Water Route:

Surface water runoff would be contaminated by the piles of coal fly ash and then would migrate to the Mississippi River. HRS-2 evaluation could increase the score with the 15 mile distance downstream, and locating drinking water intakes.

Air Route:

Potential for air release is high due to the exposed piles of fly ash which could become airborne.

On-Site Route:

The potential for direct contact is possible since wastes are exposed at the surface. It is unknown if site is easily accessible or fenced.

Probability to Score above 28.5 (after SI)
[X] High [ ] Medium [ ] Low

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Priority For SI
[X] High [ ] Medium [ ] NFRAP [ ] Perform PA2 [ ] Complete HRS Pkg.

Comments

The fire and explosion route was not evaluated. The potential for a ground water release is high. Because piles of fly ash are exposed on the site surface, the probability for air and surface water contamination also is high. The current Direct Contact score is 37.5.

Concurrence
[ ] ESD [ ] SPFD _____
(Date)

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***** GROUND WATER ROUTE WORK SHEET *****

	Current Score	Highest Score	Ref.	Comments
1. OBSERVED RELEASE	0	45	1	
2. ROUTE CHARACTERISTICS				
DEPTH TO AQUIFER OF CONCERN (2)	3	3		Wastes deposited in aquifer
NET PRECIPITATION	1	1		+ 4 inches
PERMEABILITY OF UNSATURATED ZONE	2	2		Fractured limestone
PHYSICAL STATE	2	2		Solid - Fly ash
ROUTE CHARACT. SCORE =	8	8		
3. CONTAINMENT	3	3	1	Ground water is contaminated
4. WASTE CHARACTERISTICS				
TOXICITY/PERSISTENCE	18	18	2	Lead
HAZARDOUS WASTE QUANTITY	1	8	1	unknown, could be high amount
WASTE CHARACT. SCORE =	19	26		
5. TARGETS				
GROUND WATER USE (3)	6	6	3	Drinking water use; unthreaten water available
DISTANCE TO NEAREST WELL/ POPULATION SERVED	10	10	1	Well on site; pop. of Buffalo = 420
TOTAL TARGETS SCORE =	16	16		
GROUND WATER ROUTE SCORE = (57,330/100 factor)	12.7	24.49		

( ) Multiplier

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***** SURFACE WATER ROUTE WORK SHEET ******

	Current Score	Highest Score	Ref.	Comments
1. OBSERVED RELEASE	0	45		Possible but not probable
2. ROUTE CHARACTERISTICS				
FACILITY SLOPE AND INTERVENING TERRAIN	2	2	4	Slope = 140'/3000'
1-yr., 24-hr. RAINFALL	2	2	5	1 yr, 24/hr = 2.75
DISTANCE TO NEAREST SURFACE WATER (2)	2	2	4	3000' to Mississippi River
PHYSICAL STATE	2	2	1	Solid - Powder from baghouse
ROUTE CHARACT. SCORE =	8	8		
3. CONTAINMENT	3	3	1	Open piles in mine tunnels and on surface
4. WASTE CHARACTERISTICS				
TOXICITY PERSISTENCE	18	18	2	lead, Cd, Cr, Cu
HAZ. WASTE QUANTITY	1	8	1	Unknown at this time. Could be high amount
WASTE CHARACT. SCORE =	19	26		
5. TARGETS				
SURFACE WATER USE (3)	2	3	3	No commercial fishing, possible drinking water
DISTANCE TO A SENSITIVE ENVIRONMENT (2)	1	1	4	Refuge 3000' away
POPULATION SERVED/DISTANCE TO DOWNSTREAM WATER INTAKE	0	12	3	No intakes known; could assume for highest score
TOTAL TARGETS SCORE =	3	16		
SURFACE WATER ROUTE SCORE = (64,350/100 factor)	2.13	29.09		

( ) Multiplier

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***** AIR ROUTE WORK SHEET *****

	Current Score	Highest Score	Ref.	Comments
1. OBSERVED RELEASE	0	45	4	Open waste piles
DATE AND LOCATION				
2. WASTE CHARACTERISTICS				
REACTIVITY AND INCOMPATIBILITY	0	0		
TOXICITY (3)	0	15	1	Lead
HAZARDOUS WASTE QUANTITY	1	8		Unknown, could be high.
WASTE CHARACT. SCORE =	0	23		
3. TARGETS				
POPULATION WITHIN 4 MILES	0	21	4	Davenport, IA
DISTANCE TO SENSITIVE ENVIRONMENT (2)	0	2	4	3,000' to refuge on Mississippi River
LAND USE	0	3	4	Residential possible
TOTAL TARGETS SCORE =	0	26		
AIR ROUTE SCORE = (35,100/100 factor)	0	76.6		

( ) Multiplier

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CURRENT SCORE	S	S^2
Groundwater Route Score (S_{gw})	12.7	161.29
Surface Water Route Score (S_{sw})	2.12	4.49
Air Route Score (S_a)	0	0
$S_{gw}^2 + S_{sw}^2 + S_a^2$		165.78
$\sqrt{S_{gw}^2 + S_{sw}^2 + S_a^2}$		12.8
$\sqrt{S_{gw}^2 + S_{sw}^2 + S_a^2} / 1.73 = S_M =$		7.4

HIGHEST SCORE	S	S^2
Groundwater Route Score (S_{gw})	24.49	599.76
Surface Water Route Score (S_{sw})	29.09	846.22
Air Route Score (S_a)	76.6	5,877
$S_{gw}^2 + S_{sw}^2 + S_a^2$		7,322.9
$\sqrt{S_{gw}^2 + S_{sw}^2 + S_a^2}$		85.5
$\sqrt{S_{gw}^2 + S_{sw}^2 + S_a^2} / 1.73 = S_M =$		49.46

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Direct Contact Work Sheet

Rating Factor	Assigned Value (Circle One)	Multiplier	Score	Max. Score	Ref. (Section)
[1] Observed Incident	0 **45**	1	45	45	8.1
If line [1] is 45, proceed to line [4] If line [1] is 0, proceed to line [2]					
[2] Accessibility	0 1 2 **3**	1	3	3	8.2
[3] Containment	0 **15**	1	15	15	8.3
[4] Waste Characteristics Toxicity	0 1 2 **3**	5	15	15	8.4
[5] Targets					8.5
Population Within a 1-Mile Radius	0 1 **2** 3 4 5	4	8	20	
Distance to a Critical Habitat	0 **1** 2 3	4	4	12	
Total Targets Score			12	32	
[6] If line [1] is 45, multiply [1] x [4] x [5] If line [1] is 0, multiply [2] x [3] x [4] x [5]			8100	21,600	
[7] Divide line [6] by 21,600 and multiply by 100		S_{DC} = 37.5			

HRS DOCUMENT LOG SHEET

SITE NAME Unthum Trucking
CITY Buffalo STATE Iowa
IDENTIFICATION NUMBER IAD980852297

REFERENCE NUMBER	DESCRIPTION OF REFERENCE
1	EPA Site File, CERCLIS #IAD980852297
2	Dangerous Properties of Industrial Materials, 1984, Sax, Irving N., Van Nostrand Reinhold Company.
3	The Water Story in Southeastern Iowa, Iowa Geological Survey, State of Iowa, 1965.
4	Andulusia 7.5" Quadrangle Map, USGS, 1970.
5	HRS Users Manual, 1984.